

Inspection2000 features latest in NASA technology

From the latest in robotic grasping technology to a revolutionary drug delivery system that provides a new way of delivering multiple drugs to vascular tumors, visitors to Inspection2000 were exposed to the latest in NASA-developed technologies. The event was held November 1-3 at the Johnson Space Center.

"I saw some of the finest technology and people developing it in the world," said Doug DeMatthew, an engineer with General Electric Company. "I didn't know NASA was involved with as many commercial applications of space and commercial applications in general."

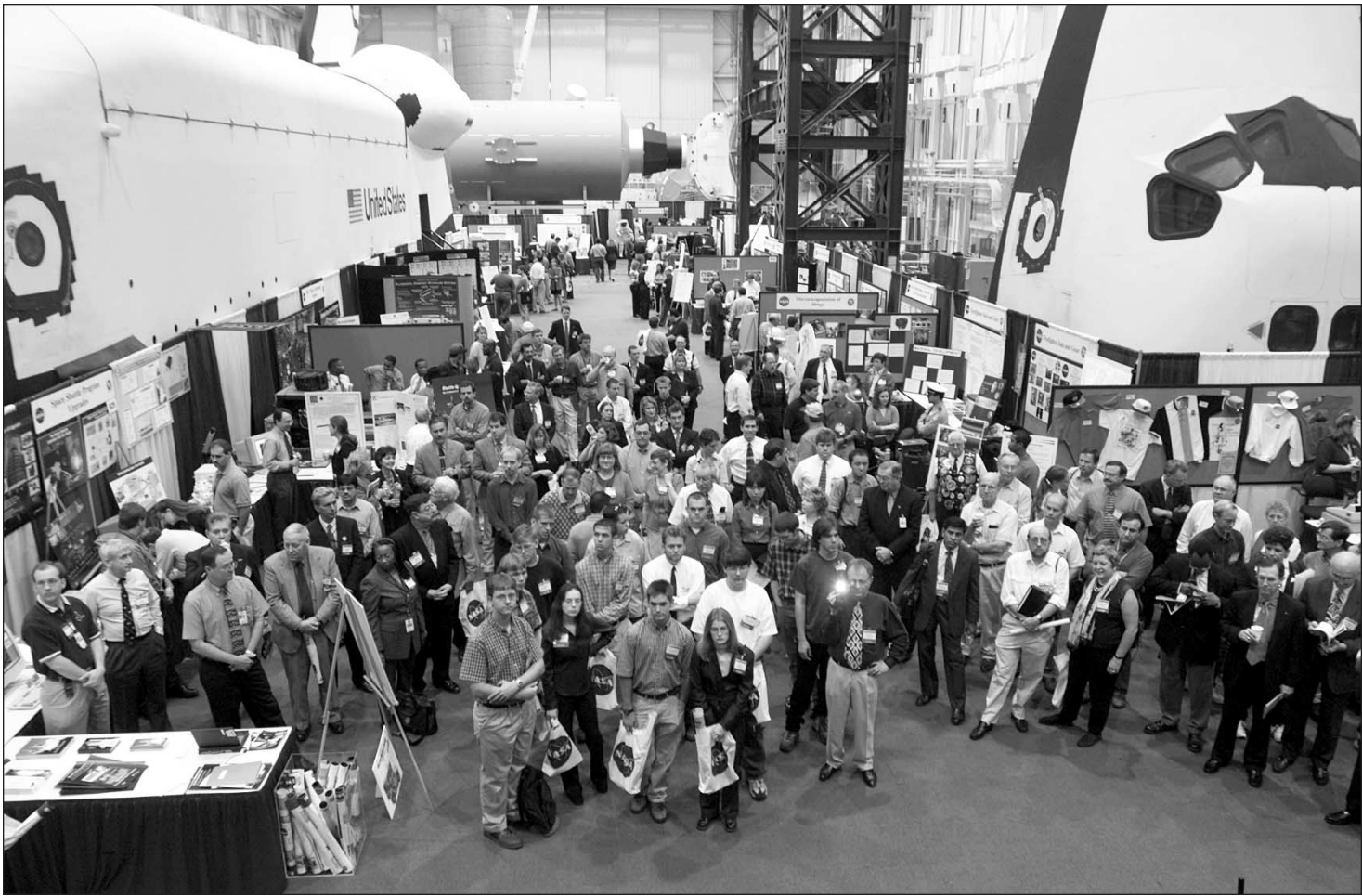
More than 2,100 professionals from industry, academia, government and the community took advantage of the three-day event to talk with NASA representatives and investigate opportunities to apply space technologies to their own endeavors. People from 28 countries, 42 states, U.S. Virgin Islands and Washington, D.C. pre-registered to attend. Guest feedback has been very positive.

"For the general public and people who are more technically advanced and knowledgeable about what goes on at NASA and the many programs at NASA, this has been a down-to-earth and enlightening experience that gives the reality of what goes on in the space program a real human touch as well as a technical touch," said Inspection visitor John Gardner, assistant director, Nevada Space Grant Consortium.

Many technologies on display have made or will soon make their way to the commercial market via the Small Business Innovation Research program. Through this program, small businesses receive funds for innovative concepts that meet NASA's technical requirements.

One such area of success involves carbon nanotubes, materials that are 10 to 100 times stronger than steel at one sixth the weight.

Through the SBIR program, researchers at ReyTech Corporation in Bend, Ore., are using nanotubes that JSC and Rice



NASA JSC Photo 2000e28304

Inspection2000 visitors check out the many exhibits on display in Bldg. 9.

Inspection guests catch a glimpse of the robot cycling through Bldg. 9.



NASA JSC Photo 2000e28311

University scientists produce to make high-performance capacitors. NASA would like to use these capacitors in tandem with batteries for applications where a strong, quick burst of energy is needed. Normally, a quick burst of energy cannot be delivered by the battery or it would drain the battery causing other systems to shut down. Using this new technology, the nanotube-based capacitor handles the high current surge for

a short period of time and the battery then provides sustaining energy.

"The concept is to use a capacitor, in conjunction with a battery, so that the life of the battery can be extended and the weight of batteries to be launched into space can be reduced," explains ReyTech Director of Research Curtiss Renn. "We are using the nanotubes because they demonstrate long-term stability, have high energy and power capabilities, and are electrically very conductive."

Brad Files, JSC nanotube project lead, remarks, "It's great to see some early applications of nanotubes to go with the longer-term breakthrough possibilities."

On the commercial market now and developed under an SBIR project, the Biclops is a three-axis motion-control platform for aiming multiple cameras. The device has wide applications in the security industry.

"People can use this system in combination with software and hardware to track people as they walk through a room," says Bryn Wolfe, a robotics engineer with Metrica, Inc., of Houston, the firm that is marketing the product. "The initial intention of using this system was to track astronauts in space. We're trying to commercialize this capability for use in security systems. We're trying to get the technology to the point where people can use it in their homes. They'll be able to plug it into an outlet and hook it up to a VCR. It will keep track of activity on their property."

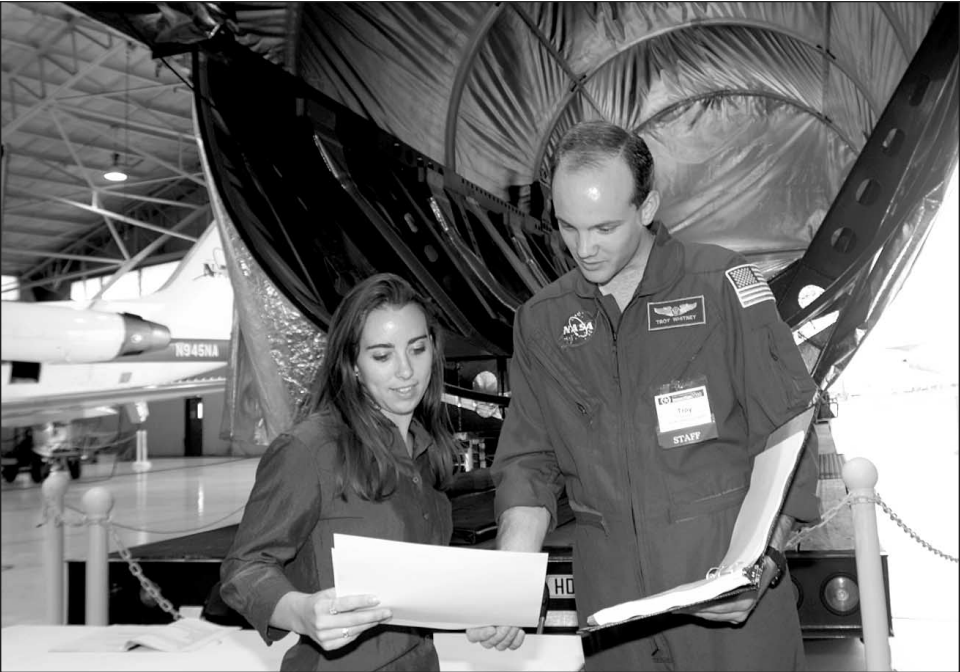
Many Inspection visitors were seeing not red but infrared in Bldg. 9. The latest in infrared imaging technology, part of an exhibit on firefighter suits and equipment, featured a small infrared camera that has the potential for numerous applications in space and on Earth. It can supply International Space Station crewmembers with a mini-heads-up display mounted in their portable breathing apparatus mask so they can see through a smoke-filled cabin, execute fire suppression operations as need be, or find their way to the X-38. In the near future, the technology may provide terrestrial firefighters with a small, hands-free

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NASA JSC Photo 2000e28309

Rick Medina, right, discusses the articulating foot restraint used by astronauts during space walks with Inspection guests Jairo Ariza and Elizabeth Ariza.



NASA JSC Photo 2000e28312

Brandy Quarles and Troy Whitney were on hand to tour guests through Ellington Field.